

REMARKS

Reconsideration of this application in light of the above amendments and following arguments is courteously solicited.

Initially it would be noted that claims 16 and 23 have not been rejected over any prior art references.

Claims 16 and 32 were rejected under 35 USC 112, second paragraph.

Claims 16 and 32 have been amended so as to remove the objections raised by the Examiner in the second and fourth paragraphs of Page 2 of his final rejection. Accordingly, the claims have been amended to provide proper antecedent basis and to amend the words "direction" and "cease" as required by the Examiner.

The only issue remaining, in light of the above amendments, is the Examiner's rejection of the claims under 35 USC 112, second paragraph as set forth in the third paragraph on Page 2 of the Examiner's Action. The Examiner's rejection states that he considers the phrase "achievable relative density after sintering" to be indefinite. Applicants respectfully traverse the Examiner's position.

Initially it should be noted that the phrase now objected to by the Examiner was specifically set forth in originally filed claim 3. The Examiner did not raise any objection or

rejection based on this language as previously claimed. Accordingly, Applicants submit that the Examiner's final rejection is premature in that the Examiner has raised for the first time an issue with respect to a phrase already in the claims as originally filed. Accordingly, it cannot be argued that Applicants' Amendment (by incorporating this phrase from dependent claim 3 into independent claim 1) necessitated the new grounds of rejection. Accordingly, it is clear under the provisions of the Manual of Patent Examining Procedure that the Examiner's final rejection is premature and should be withdrawn.

In addition to the foregoing, it is submitted that the Examiner's rejection is in error and is untenable. The "achievable relative density" is not indefinite. Clearly the achievable relative density is dependent on those factors set forth by the Examiner; however, the fact that the achievable relative density after sintering is dependent on these factors does not render the phrase indefinite. Clearly the achievable relative density is that density which is obtainable under chosen sintering parameters for particular ceramic composition. There is nothing at all indefinite by this phrase. Clearly the achievable relative density would be different for different materials processed under different parameters; but, one can determine the achievable relative density for a particular material proposed under particular parameters. Therefore, it is

submitted that the term is not indefinite. In light of the foregoing it is respectfully submitted that all of the claims as pending comply with all of the requirements of 35 USC 112, second paragraph. A notice of allowance is respectfully requested.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

16. (Twice amended) A process for production of an artificial tooth substitute to be fitted on a prepared dental stump comprising the steps of:

selecting a preprepared block of porous ceramic material having a relative density ρ_R and an achievable relative density ρ_S after sintering;

scanning and digitizing a three-dimensional outer and inner surface of a positive model of a skeletal structure for the artificial tooth substitute to obtain data;

determining an enlargement factor (f) for the obtained data in accordance with the following

$$f = \sqrt[3]{\frac{\rho_S}{\rho_R}}$$

where ρ_R is the relative density of a preprepared blank and ρ_S is the achievable relative density after sintering;

enlarging the obtained data linearly in all [direction] directions by the enlargement factor (f) thereby compensating precisely for sinter shrinkage to obtain modified data for an enlarged model;

transferring the modified data to a control unit of a processing machine;

processing a blank of the preprepared porous ceramic

material in the processing machine and removing material therefrom to produce a design form of the enlarged model;

dense-sintering the design form of porous ceramic material to obtain a skeletal structure having precise end dimensions; and

facing the skeletal structure as desired to form the artificial tooth substitute.

32. (Amended) A process for production of an artificial tooth substitute to be fitted on a prepared dental stump comprising the steps of:

scanning and digitizing a three-dimensional outer and inner surface of a positive model of a skeletal structure for the artificial tooth substitute to obtain data;

determining an enlargement factor (f) for the obtained data in accordance with the following

$$f = \sqrt[3]{\frac{\rho_s}{\rho_R}}$$

where ρ_R is the relative density of a preprepared blank and ρ_s is the achievable relative density after sintering;

enlarging the obtained data linearly in all [direction] directions by the enlargement factor (f) thereby compensating precisely for sinter shrinkage to obtain modified data for an enlarged model;

transferring the modified data to a control unit of a processing machine for generating a desired path of a tool;

[cease] ceasing scanning and digitizing;

processing a blank of porous ceramic material in the processing machine wherein material is removed by the tool moving along the devised path to produce a design form of the enlarged model;

dense-sintering the design form of porous ceramic material to obtain a skeletal structure having precise end dimensions; and

facing the skeletal structure as desired to form the artificial tooth substitute.